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ABSTRACT

The United States Training and Employment Service General Aptitude Test Battery (GATB), first published in 1947, has been included in a continuing program of research to validate the tests against success in many different occupations. The GATB consists of 12 tests which measure nine aptitudes: General Learning Ability; Verbal Aptitude; Numerical Aptitude; Spatial Aptitude; Form Perception; Clerical Perception; Motor Coordination; Finger Dexterity; and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, and a standard deviation of 20. Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, when combined, predict job performance. Cutting scores are set only for those aptitudes which aid in predicting the performance of the job duties of the experimental sample. The GATB norms described are appropriate only for jobs with content similar to that shown in the job description presented in this report. A description of the validation sample and a personnel evaluation form are also included. (AG)

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S-451 S-451

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May 1970

U.S. Training and
Employment Service
Technical Report
S-451

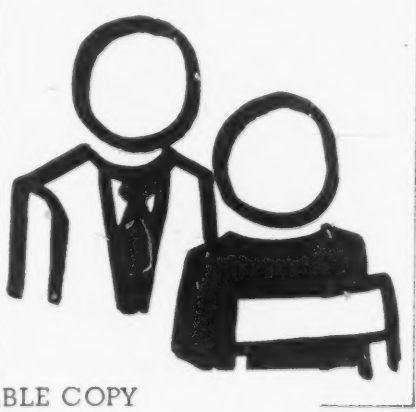
Development of USTES

APTITUDE TEST BATTERY FOR

COUNSELOR

(profess & kin.) II
045.108

U.S. DEPARTMENT OF LABOR
Manpower Administration



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ED 069638

Technical Report on Development of USTES Aptitude Test Battery for

Counselor (profess. & kin.) II 045.108-010

S-451

(Developed in Cooperation with the
North Carolina State Employment Service)

Manpower Administration
U. S. Department of Labor

May 1970

FOREWORD

The United States Training and Employment Service General Aptitude Test Battery (GATB) was first published in 1947. Since that time the GATB has been included in a continuing program of research to validate the tests against success in many different occupations. Because of its extensive research base the GATB has come to be recognized as the best validated multiple aptitude test battery in existence for use in vocational guidance.

The GATB consists of 12 tests which measure 9 aptitudes: General Learning Ability, Verbal Aptitude, Numerical Aptitude, Spatial Aptitude, Form Perception, Clerical Perception, Motor Coordination, Finger Dexterity, and Manual Dexterity. The aptitude scores are standard scores with 100 as the average for the general working population, with a standard deviation of 20.

Occupational norms are established in terms of minimum qualifying scores for each of the significant aptitude measures which, in combination, predict job performance. For any given occupation, cutting scores are set only for those aptitudes which contribute to the prediction of performance of the job duties of the experimental sample. It is important to recognize that another job might have the same job title but the job content might not be similar. The GATB norms described in this report are appropriate for use only for jobs with content similar to that shown in the job description included in this report.

GATB Study #2787

DEVELOPMENT OF USTES APTITUDE TEST BATTERY

for

Counselor (profess. & kin.) II 045.108-010

S-451

This report describes research undertaken for the purpose of developing General Aptitude Test Battery (GATB) norms for the occupation of Counselor (profess. & kin.) II 045.108-010. The following norms were established:

GATB Aptitude	Minimum Acceptable GATB Scores
G - General Learning Ability	105
N - Numerical Aptitude	105
Q - Clerical Perception	105

RESEARCH SUMMARY

Sample: Fifty-three workers (49 males and 4 females) employed as Counselors by the North Carolina Division of Vocational Rehabilitation. This study was conducted prior to the requirements of providing minority information. Therefore, minority groups composition is unknown.

Criterion: Supervisory Ratings.

Design: Concurrent. Test and criterion data were collected at approximately the same time. Minimum aptitude requirements were determined on the basis of a job analysis and statistical analyses of aptitude mean scores, standard deviations, aptitude-criterion correlations and selective efficiencies.

Concurrent Validity: Phi coefficient = .34 ($P/2 < .01$)

Effectiveness of Norms: Only 66% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the above norms, 79% would have been good workers. Thirty-four percent of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the above norms, only 21% would have been poor workers. The effectiveness of the norms is shown graphically in Table 1.

Table 1

	Without Tests	With Tests
Good Workers	66%	79%
Poor Workers	34%	21%

SAMPLE DESCRIPTION

Size: N=53

Occupational Status: Employed workers.

Work Setting: Workers were employed in North Carolina Vocational Rehabilitation District Offices and facilities in various North Carolina State institutions.

Employment Selection Requirements: Education: Bachelor's degree
Previous Experience: None
Tests: None
Other: Personal interview

Principal Activities: The job duties for each worker are comparable to those shown in the job description in the Fact Sheet.

Minimum Experience: All employees in the sample had at least six months experience as Counselors.

Table 2

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for Age, Education, and Experience

	Mean	SD	Range	r
Age (years)	33.1	8.1	23-64	.042
Education (college years)	4.2	.6	4-6	.154
Experience (months)	44.0	58.6	6-240	.069

EXPERIMENTAL TEST BATTERY

All 12 tests of the GATB, B-1002B were administered to the sample group during the period of 1959 through 1966.

CRITERION

Rating Scale: The criterion data consisted of supervisory ratings of job proficiency. Certain aptitudinally related items selected from the official Counselor Evaluation form of the North Carolina Division of Vocational Rehabilitation, were used.

Reliability: Only one rating was available, therefore reliability could not be computed.

Criterion Distribution: Range: 35-52
Mean: 41.1
SD: 4.0

Criterion Dichotomy: The criterion distribution was dichotomized, on the basis of the analyst's judgment, into low and high groups by placing 34% of the sample in the low criterion group to correspond with the percentage of workers considered unsatisfactory or marginal. Workers in the high criterion group were designated as "good workers" and those in the low group as "poor" workers." The criterion critical score is 40.

APTITUDES CONSIDERED FOR INCLUSION IN THE NORMS

Aptitudes were selected for tryout in the norms on the basis of a qualitative analysis of job duties involved and a statistical analysis of test and criterion data. Aptitudes, G, V,N, and Q which do not have a high correlation with the criterion were considered for inclusion in the norms because these aptitudes had relatively high mean scores and both relatively and significantly low standard deviations. Aptitudes G, V, and Q were also included because the qualitative analysis indicated that they were important for the job duties. Tables 3, 4, and 5 show the results of the qualitative and statistical analyses.

TABLE 3

Qualitative Analysis
(Based on the job analysis, the aptitudes indicated appear to be important to the work performed)

G - General Learning Ability	Necessary to understand the technical and professional material required of a counselor and to make logical decisions during rehabilitation planning.
V - Verbal Aptitude	Necessary in understanding counseling directives and procedures and in communication with clients.
N - Numerical Aptitude	Necessary in verifying bills and computing the cost of rehabilitation programs for clients.
Q - Clerical Perception	Necessary in keeping accurate records and approving bills.

TABLE 4

Means, Standard Deviations (SD), Ranges, and Pearson Product-Moment Correlations with the Criterion (r) for the Aptitudes of the GATB

N = 53

Aptitudes	Mean	SD	Range	r
G - General Learning Ability	113.3	11.3	87-134	.230
V - Verbal Aptitude	113.1	11.1	82-131	.102
N - Numerical Aptitude	112.4	9.8	82-130	.226
S - Spatial Aptitude	105.0	18.4	71-143	-.025
P - Form Perception	107.6	19.8	57-145	-.028
Q - Clerical Perception	117.1	14.4	74-146	.010
K - Motor Coordination	111.4	17.4	76-163	-.027
F - Finger Dexterity	93.7	21.3	44-142	.234
M - Manual Dexterity	106.7	25.2	37-159	.088

TABLE 5

Summary of Qualitative and Quantitative Data

Type of Evidence	Aptitudes								
	G	V	N	S	P	Q	K	F	M
Job Analysis Data: Important	X	X	X			X			
Irrelevant							O	O	O
Relatively High Mean	X	X	X			X			
Relatively Low SD	X	X	X			X			
Significant Correlation with Criterion									
Aptitudes to be Considered for Trial Norms	G	V	N			Q			

DERIVATION AND VALIDITY OF NORMS

Final norms were derived on the basis of a comparison of the degree to which trial norms consisting of various combinations of Aptitudes G, V, N, and Q, at trial cutting scores were able to differentiate between the 66% of the sample considered good workers and 34% of the sample considered poor workers. Trial cutting scores at five point intervals approximately one standard deviation below the mean are tried because this will eliminate about one-third of the sample with three-aptitude norms. For two-aptitude trial norms, minimum cutting scores of slightly more than one standard deviation below the mean will eliminate about one-third of the sample. The phi coefficient was used as a basis for comparing trial norms. The optimum differentiation for the occupation of Counselor II was provided by the norms of G-105, N-105, and Q-105. The validity of these norms is shown in Table 6 and is indicated by a phi coefficient of .34 (statistically significant at the .01 level).

TABLE 6

Concurrent Validity of Test Norms G-105, N-105, and Q-105

	Nonqualifying Test Scores	Qualifying Test Scores	Total
Good Workers	8	27	35
Poor Workers	11	7	18
Total	19	34	53

Phi Coefficient = .34 Chi Square(X^2y) = 6.0
Significance Level = P/2 < .01

DETERMINATION OF OCCUPATIONAL APTITUDE NORM

The data for this study met the requirements for incorporating the occupation studied into OAP-2 which is shown in the 1970 edition of Section II of the Manual for the General Aptitude Test Battery. A phi coefficient of .22 is obtained with the OAP-2 norms of G-110, V-105, and Q-105.

7-63

STATE OF NORTH CAROLINA
DIVISION OF VOCATIONAL REHABILITATION
DEPARTMENT OF PUBLIC INSTRUCTION
(The Circled items were used as the criteria.)
COUNSELOR EVALUATION

Name _____ Title _____ Location _____

Rating Period: From: _____ To _____

Instructions: 1. Study instructions in Rating Manual before completing this form.
2. Place an (X) in the appropriate column for each trait.

FACTORS OF PERFORMANCE	* Above Average	Average	Below Average	Unsatisfactory
A. ORGANIZATION				
(1) Planning an effective, long term work schedule				
(2) Discrimination between ordinary and extraordinary				
(3) Maintaining a well-balanced caseload				
B. QUALITY OF WORK				
(4) Accuracy				
5. Neatness and orderliness				
6. Thoroughness				
(7) Adequacy of recording, documentation, correspondence and reports				
C. QUANTITY OF WORK				
8. Amount and flow				
(9) Promptness of completion				
D. WORK HABITS				
10. Observing office procedures				
11. Punctuality				
12. Cooperativeness				
E. WORK INTEREST AND ATTITUDE				
13. Motivation and enthusiasm for work				
14. Attitude toward client, job, staff and public				
15. Loyalty to agency and objectives on State and National level				
(16) Initiative and ingenuity				
F. PRACTICAL JUDGMENT				
(17) Ability to make logical decisions				
(18) Knowledge and interpretation of rehabilitation laws and policies				
(19) Counseling and interviewing skills				
20. Assimilation of changed procedures				
(21) Acceptance and use of supervision				
G. OTHERS				
22. Personal appearance and dress				
(23) Program promotion and interpretation				
(24) Effective use of community resources				
25. Professional growth and level of aspiration				

* Above Average: This evaluation is given only to the employee whose performance is above that which is normally expected.
Average: This is the performance level which is normally expected.
Below Average: Performance at this level indicates a need for improvement.
Unsatisfactory: Performance at this level indicates that prompt and identifiable improvement is necessary.

_____ _____ _____
Signature of Immediate Supervisor Title Date

Check here if evaluation was discussed with the employee: _____

May 1970 S-451

FACT SHEET

Job Title: Counselor (profess. & kin.) II 045.108-010

Job Summary: Compiles and studies occupational, educational, medical, and economic information to aid mentally, emotionally, and physically handicapped individuals in making and carrying out vocational objectives. Authorizes purchase of services and prosthetic devices and requests authorization for purchase of materials to prepare counselees for work. Refers clients to placement service or develops job through employer contact to complete rehabilitation program. Engages in follow-up activities to evaluate rehabilitation services.

Work Performed: Interviews disabled persons to obtain personal information. Refers clients to psychological or medical diagnosticians to establish nature of mental, emotional, or physical disability. Requests additional information from schools, hospitals, physicians, dentists, and others to gain information required by regulations. Organizes and analyzes records, reports, test results, and other sources of information to determine if the clients have disabilities that are vocational handicaps, are eligible for services, and can reasonably be expected to be rehabilitated. Collects information on occupations, vocational schools, colleges, rehabilitation centers, appliances, treatment services, and funds for disabled persons to aid clients in making and carrying out vocational, educational, or medical choices. Prepares rehabilitation plans having clients take responsibility for their own actions and becoming aware of services, materials, and goals involved. Authorizes planned services and requests authorization for goods to guarantee vendor payment of incurred expenses. Coordinates scheduling, arranging, and purchasing of authorized goods and services to facilitate the rehabilitation plan. Approves bills for authorized goods and services, sends bills to accounting office for payment to keep expenditures at authorized levels. Maintains case file to keep records, plans, authorizations, approved bills, and letters. Offers counsel, advice, and assistance to clients while carrying out the rehabilitation plan. Refers clients to placement service to complete rehabilitation plan. May contact employers and analyze jobs to develop job for client. Follows up counselee to see if rehabilitation plan was successful and closes case when all information is completed.

Effectiveness of Norms: Only 66% of the nontest-selected workers used for this study were good workers; if the workers had been test-selected with the S-451 norms, 79% would have been good workers. Thirty-four percent of the nontest-selected workers used for this study were poor workers; if the workers had been test-selected with the S-451 norms, only 21% would have been poor workers.

Applicability of S-451 Norms: The aptitude test battery is applicable to jobs which include a majority of the job duties described above.

GPO 898.724

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